



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/715,506	11/19/2003	Shozo Katsuki	740709-513	4696

22204 7590 09/20/2004

NIXON PEABODY, LLP
401 9TH STREET, NW
SUITE 900
WASHINGTON, DC 20004-2128

EXAMINER

LAM, CATHY FONG FONG

ART UNIT	PAPER NUMBER
----------	--------------

1775

DATE MAILED: 09/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/715,506

Applicant(s)

KATSUKI ET AL.

Examiner

Cathy Lam

Art Unit

1775

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

Claim Rejections - 35 USC § 112

1. Claims 1 and dependents are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims are structurally indefinite, as it is unclear how are the polyimide substrate, the subbing metal layer (ie. the Mo-Ni alloy layer), a plated electro-conductive film, a copper metal layer related in position? Clarification is required.

Furthermore, in claim 7, applicant uses "aromatic polyimide film" but in claim 1 applicant uses "aromatic polyimide substrate". In claim 3, applicant uses "electro-conductive metal" but in claim 1 applicant uses "electro-conductive film". Applicant is required to be consistently throughout.

Claim 10 is structurally indefinite, as it is unclear whether or not there are three metal layer, that is a polyimide substrate, a Mo-Ni subbing metal layer, a sputtered copper metal layer and a plated electro-conductive metal film; in the named order? Clarification is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto et al (US 6596968) or Yamamoto et al (US 6548180).

It is noted by the Examiner that some claims are drafted in a product by process format. It is the product itself which must be new and unobvious. Unless some unexpected result is shown that occurs due to Applicant's specific process(es), different processing steps are not patentably distinguishing for claims to an article.

Due to the invention is unclear, with respect to the prior art rejections below, the claims will be given the broadest possible interpretation in view of the specification.

The examiner is interpreting the present invention as an electro-conductive metal plated polyimide substrate comprised of an aromatic polyimide layer, a Mo-Ni subbing layer, a sputtered copper layer and a copper layer; all in the named order.

Yamamoto '968 discloses a polyimide film laminate comprised of an aromatic polyimide film and a metal film.

The aromatic polyimide film is comprised of a high T_g aromatic polyimide film and two low T_g aromatic polyimide layer on both surfaces of the high T_g aromatic polyimide film. The metal film is laminated onto the low T_g aromatic polyimide layer (col 2 L 39-51 & Figs. 3 & 4).

The aromatic polyimide film is formed from a biphenyltetracarboxylic acid compound and a p-phenylenediamine (col 4 L 18-20).

The metal films may comprised of a subbing layer such can be nickel or molybdenum, having a thickness of less than 1 μm . A copper layer is then plated over the subbing layer (col 7 L 34-40).

The metal films comprised of the subbing layer and the copper films, has a thickness of from 3-12 μm (col 3 L 44-48).

Yamamoto '180 discloses an aromatic polyimide film laminate comprised of an aromatic polyimide film and a metal film.

The aromatic polyimide film is comprised of a biphenyltetracarboxylic acid component and a p-phenylenediamine component (col 3 L 23-27). An adhesive layer may be placed onto the aromatic polyimide film before the metal film deposited (col 3 L 55-58 & col 6 L 44-45). The adhesive can be a polyimide adhesive (col 6 L 15).

The metal film can be of two or more metal layers with the lower metal layer (or subbing layer) be molybdenum, nickel or their alloys and the upper metal layer being copper (col 6 L 57-63). The metal film has a thickness of 1-20 μm (col 6 L 64-67).

The two reference teach the present invention but is silent about the composition of the subbing layer.

In view of the prior art teachings, it would have been obvious that any composition of molybdenum and nickel would perform the same job because both prior art disclose that either one of Mo and Ni alone or their alloy could be subbing layer, thus combining two of them in a workable ratio is within a routine experimentation.

Furthermore, the examiner takes the position that the polyimide layer in the present invention also exhibit the same properties as claimed in claim 11 because the materials disclosed in the prior art meet the present invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cathy Lam whose telephone number is (571) 272-1538. The examiner can normally be reached on 9am-6pm.

Art Unit: 1775

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on (571) 272-1535. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Cathy Lam
Primary Examiner
Art Unit 1775

cfl
September 15, 2004